

# Mineral Industry Surveys

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## PLATINUM-GROUP METALS IN JULY 2005

The Engelhard Industries platinum price for July averaged \$876.60 per troy ounce, 1% less than the average June price, and 8% higher than the average July 2004 price. July's average palladium price was \$186.95 per troy ounce, 1% less than the average June price, and 16% less than the average July 2004 price. Other average July 2005 Engelhard platinum-group metal (PGM) prices were: iridium, \$174.25 per troy ounce (6% above the average June price and 16% below the average July 2004 price); rhodium, \$1,976.25 per troy ounce (7% above the average June price and 103% above average July 2004 price); and ruthenium, \$80.80 per troy ounce (11% above the average June price and 34% above the average July 2004 price).

On August 15, the Defense National Stockpile Center (DNSC) (2005b) announced the July PGM sales results under Basic Ordering Agreement DLA-PGM-002. In July, DNSC sold 55.77 kilograms (kg) of iridium, valued at approximately \$270,000, to PGM Trading Corporation (New York, NY). The DNSC also announced Amendment Number 003 to Basic Ordering Agreement DLA-IRIDIUM-003, which adds additional material for sale and updates the Material Safety Data Sheets (Defense National Stockpile Center, 2005a). Although DNSC palladium and platinum stockpiles had been depleted, the DNSC was holding 261 kg of platinum for other government agencies that was not available for purchase (Platts Metals Week, 2005a).

Anglo Platinum Limited (Angloplat) (Johannesburg, South Africa) and Aquarius Platinum Limited (Hamilton, Bermuda) announced a 'pool and share' agreement (P&SA) to mine contiguous properties on their respective Rustenburg and Marikana lease areas. This was the second P&SA (the first was in the Kroondal Mine area) between the two companies, under which the two companies will share infrastructure, marketing and processing facilities. The "Marikan Venture" is subject to approval by the boards of both companies and to various regulatory and statutory approvals. The venture has reported reserves and resources of 137,000 kg (4.4 million ounces) of

PGMs (Anglo Platinum Limited, 2005). Angloplat also announced that it was still on target to produce 82,000 kg of PGMs in 2005, and between 84,000 kg and 87,000 kg of PGMs in 2006 (Metal Bulletin Daily, 2005).

Zimbabwe Platinum Mines Limited (Zimplats) (Harare, Zimbabwe) sold 8% more palladium, 6% more platinum, and 10% more rhodium in the second quarter than it did in the first quarter 2005 (Zimbabwe Platinum Mines Limited, 2005).

In Zimbabwe, the government reportedly planed to trade the mineral rights to its PGM resources to another country to raise money and political support. The Zimbabwe President selected China as a potential investor and recently visited there to discuss the potential partnership. China's increasing consumption and desire for a secure source of PGMs would make China an ideal partner. To start the process of a partnership, the Zimbabwe government wants Zimplats to enter into an agreement with Chinese companies to build a refinery in Zimbabwe (Swindells, 2005).

North American Palladium Ltd. (NAP) (Toronto, Ontario, Canada) announced that its second quarter palladium production was 1,500 kg, down 8% compared with production in the first quarter and 37% lower than 2004 second quarter production (North American Palladium Ltd., 2005). NAP palladium production in 2005 could fall 15% short of the projected 8,400 kg because of low production in the first 2 quarters (Platts Metals Week, 2005b).

Ames Research Laboratory and Iowa State University, Ames, IA, developed a new thermal barrier coating for gas turbine blades. The addition of hafnium and platinum to the coating significantly improved the oxidation resistance and durability and allowed the turbine to withstand severe environmental conditions (Advanced Materials & Processes, 2005)

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TABLE 1  
PLATINUM-GROUP METALS PRICES<sup>1</sup>

(Dollars per troy ounce)

	Platinum	Palladium	Rhodium	Iridium	Ruthenium
2004:					
Low/date	771.00 May 10	180.00 Dec. 17	500.00 Jan. 5 and 6	87.00 Feb. <sup>2</sup>	41.00 Jan. 5 and 6
High/date	940.00 Apr. 19	340.00 Apr. 12	1,525.00 Aug. 9 and 10	230.00 Mar. and Apr. <sup>2</sup>	80.00 Nov. <sup>2</sup>
Average	848.76	232.93	983.24	185.33	64.22
2005:					
May:					
Low/date	854.00/16	185.00/26	1,520.00 <sup>2</sup>	155.00 <sup>2</sup>	66.00/2 and 3
High/date	881.00/10	197.00 <sup>2</sup>	1,575.00 <sup>2</sup>	160.00 <sup>2</sup>	69.00 <sup>2</sup>
Average	869.00	191.38	1,557.14	156.67	67.57
June:					
Low/date	871.00/10	184.00/29	1,620.00/1	160.00 <sup>2</sup>	69.00 <sup>2</sup>
High/date	900.00/20	192.00/16	2,040.00/24	170.00 <sup>2</sup>	76.00 <sup>2</sup>
Average	882.95	188.36	1,841.59	164.32	72.86
July:					
Low/date	863.00/5	174.00/5	1,850.00/7 and 8	170.00 <sup>2</sup>	76.00/1 and 5
High/date	900.00/29	197.00/22	2,090.00/14 and 15	175.00 <sup>2</sup>	85.00 <sup>2</sup>
Average	876.60	186.95	1,976.25	174.25	80.80
Year to date:					
Low/date	847.00 Jan. 4	174.00 Jul. 5	1,330.00 Jan. <sup>2</sup>	145.00 Feb., Mar., Apr. <sup>2</sup>	55.00 Feb. and Mar. <sup>2</sup>
High/date	900.00 Jun. 20 and Jul. 29	211.00 Mar. 4	2,090.00 Jul. 14 and 15	175.00 Jul. <sup>2</sup>	85.00 Jul. <sup>2</sup>
Average	870.80	191.39	1,637.02	158.72	66.66

<sup>1</sup>Quotes from Engelhard Industries.

<sup>2</sup>Occured multiple days in month listed.

Source: Platts Metals Week.

TABLE 2  
U.S. IMPORTS FOR CONSUMPTION OF PLATINUM METAL, BY COUNTRY<sup>1</sup>

(Kilograms metal content, unless otherwise specified)

Period and country	Platinum grain and nuggets		Platinum sponge		Other unwrought platinum		Platinum, other		Platinum waste and scrap		Platinum coins	
	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)
2004	376	\$9,520	68,800	\$1,830,000	6,710	\$178,000	4,550	\$105,000	590,000	\$135,000	12	\$345
2005:												
April	1	37	3,860	106,000	108	2,660	353	4,950	4,270	14,300	3	106
May	1	39	5,710	160,000	68	1,170	1,160	28,500	335	5,230	2	55
June:												
Belgium	--	--	27 <sup>2</sup>	396	1	17	(3) <sup>2</sup>	10	--	--	--	--
Canada	1	18	--	--	--	--	25	726	2,130 <sup>2</sup>	4,270	1	13
China	--	--	--	--	--	--	--	--	6	250	--	--
Colombia	--	--	--	--	9	234	--	--	17	421	--	--
Dominican Republic	--	--	--	--	--	--	--	--	3 <sup>2</sup>	38	--	--
Germany	--	--	776	22,200	42	1,170	358 <sup>2</sup>	4,480	--	--	--	--
Hong Kong	--	--	--	--	--	--	--	--	2 <sup>2</sup>	75	--	--
Italy	--	--	42	1,070	58	1,680	20 <sup>2</sup>	48	--	--	--	--
Japan	--	--	--	--	--	--	2 <sup>2</sup>	21	119 <sup>2</sup>	4,140	--	--
Mexico	--	--	--	--	--	--	--	--	8	1,320	--	--
Norway	--	--	47	1,290	--	--	--	--	--	--	--	--
Philippines	--	--	--	--	--	--	--	--	6 <sup>2</sup>	100	--	--
Russia	--	--	658	18,700	60	1,690	--	--	--	--	--	--
South Africa	--	--	5,120	141,000	--	--	--	--	--	--	--	--
Switzerland	--	--	--	--	--	--	11 <sup>2</sup>	216	--	--	--	--
Thailand	--	--	--	--	--	--	--	--	437 <sup>2</sup>	232	--	--
United Kingdom	--	--	1,680	47,200	1 <sup>2</sup>	26	56	1,750	65	1,520	--	--
Total	1	18	8,350	232,000	170	4,820	472	7,250	2,790	12,400	1	13
Year to date	56	1,580	36,800	1,020,000	917	23,800	3,730	77,800	56,200	55,900	15	313

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>All or part of these data have been referred to the U.S. Census Bureau for verification.

<sup>3</sup>Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 3  
U.S. IMPORTS FOR CONSUMPTION OF PLATINUM-GROUP METALS, BY COUNTRY<sup>1</sup>

(Kilograms metal content, unless otherwise specified)

Period and country	Unwrought palladium		Palladium, other		Iridium <sup>2</sup>		Unwrought osmium		Unwrought ruthenium		Rhodium <sup>3</sup>	
	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)
2004	106,000	\$786,000	20,700	\$145,000	3,230	\$18,000	75	\$421	18,800	\$35,900	13,200	\$397,000
2005:												
April	7,760	49,200	991	6,770	440	2,270	--	--	2,990	5,250	1,030	50,100
May	7,810	45,700	782	4,700	427	2,300	--	--	2,270	4,320	996	47,800
June:												
Belgium	720	4,360	38 <sup>4</sup>	557	--	--	--	--	--	--	70	3,360
Canada	101 <sup>4</sup>	853	--	--	--	--	--	--	--	--	--	--
China	80	552	--	--	--	--	--	--	--	--	--	--
Germany	429	2,620	16 <sup>4</sup>	86	22 <sup>4</sup>	116	--	--	648	1,560	63	3,340
Italy	87	534	(5) <sup>4</sup>	9	--	--	--	--	--	--	4	215
Japan	105	438	107 <sup>4</sup>	116	--	--	--	--	--	--	--	--
Norway	496 <sup>4</sup>	4,910	--	--	--	--	--	--	--	--	--	--
Russia	2,530	15,200	762	4,500	--	--	--	--	26 <sup>4</sup>	15	80	4,900
South Africa	3,670	22,200	--	--	40	176	--	--	2,120	4,150	465	21,900
Switzerland	(5) <sup>4</sup>	3	62 <sup>4</sup>	470	--	--	--	--	--	--	--	--
United Kingdom	986	6,040	9 <sup>4</sup>	85	66	398	--	--	66	138	189	9,750
Total	9,210	57,700	994	5,820	128	690	--	--	2,860	5,860	871	43,400
Year to date	43,100	268,000	6,090	38,700	1,910	10,100	18	159	12,500	23,500	6,330	301,000

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Unwrought and other forms of iridium.

<sup>3</sup>Unwrought and other forms of rhodium.

<sup>4</sup>All or part of these data have been referred to the U.S. Census Bureau for verification.

<sup>5</sup>Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 4  
U.S. EXPORTS OF PLATINUM-GROUP METALS, BY COUNTRY<sup>1</sup>

(Kilograms of metal content, unless otherwise specified)

Period and country	Platinum <sup>2</sup>		Platinum waste and scrap		Palladium <sup>2</sup>		Iridium, osmium, and ruthenium <sup>2,3</sup>		Rhodium <sup>2</sup>	
	Value		Value		Value		Value		Value	
	Quantity	(thousands)	Quantity	(thousands)	Quantity	(thousands)	Quantity	(thousands)	Quantity	(thousands)
2004	20,000	\$374,000	28,400	\$520,000	31,400	\$142,000	1,090	\$8,800	311	\$7,800
2005:										
April	1,880	31,800	2,110	41,300	2,110	13,000	73	403	7	620
May	1,560	36,500	1,920	34,000	2,740	11,600	61	500	45	2,350
June:										
Australia	4 <sup>4</sup>	70	--	--	31 <sup>4</sup>	286	--	--	--	--
Canada	56 <sup>4</sup>	1,210	173 <sup>4</sup>	1,640	550 <sup>4</sup>	3,570	--	--	30 <sup>4</sup>	1,570
Chile	206 <sup>4</sup>	2,530	--	--	--	--	--	--	--	--
China	17 <sup>4</sup>	256	--	--	25 <sup>4</sup>	68	--	--	--	--
Colombia	--	--	--	--	2 <sup>4</sup>	17	--	--	--	--
Denmark	(5) <sup>4</sup>	4	--	--	9 <sup>4</sup>	60	--	--	--	--
Finland	1 <sup>4</sup>	11	--	--	1 <sup>4</sup>	16	--	--	--	--
France	12 <sup>4</sup>	182	--	--	57 <sup>4</sup>	286	3	13	--	--
Germany	108 <sup>4</sup>	1,680	298 <sup>4</sup>	2,200	412 <sup>4</sup>	910	5 <sup>4</sup>	113	--	--
Haiti	--	--	--	--	(5)	3	--	--	--	--
Hong Kong	60 <sup>4</sup>	1,410	--	--	32 <sup>4</sup>	144	--	--	(5) <sup>4</sup>	24
India	--	--	--	--	--	--	--	--	(5) <sup>4</sup>	6
Ireland	14 <sup>4</sup>	325	--	--	8 <sup>4</sup>	14	1	3	--	--
Israel	--	--	--	--	1	4	(5) <sup>4</sup>	5	--	--
Italy	352 <sup>4</sup>	9,970	--	--	24	179	--	--	3	163
Japan	339 <sup>4</sup>	7,370	180	4,030	96 <sup>4</sup>	534	(5) <sup>4</sup>	6	--	--
Korea, Republic of	--	--	--	--	45 <sup>4</sup>	104	--	--	--	--
Kuwait	(5) <sup>4</sup>	5	--	--	--	--	--	--	--	--
Malaysia	9 <sup>4</sup>	75	--	--	--	--	28	150	--	--
Mexico	19 <sup>4</sup>	426	--	--	9 <sup>4</sup>	41	--	--	(5) <sup>4</sup>	45
Netherlands	3 <sup>4</sup>	56	--	--	2	12	--	--	--	--
New Zealand	1 <sup>4</sup>	11	--	--	3	23	--	--	--	--
Norway	--	--	--	--	1 <sup>4</sup>	7	--	--	--	--
Philippines	1 <sup>4</sup>	14	--	--	--	--	--	--	--	--
Poland	(5) <sup>4</sup>	3	--	--	--	--	--	--	--	--
Qatar	--	--	--	--	(5) <sup>4</sup>	3	--	--	--	--
Romania	1	16	--	--	--	--	--	--	--	--
Russia	1	18	--	--	--	--	--	--	--	--
Saudi Arabia	--	--	--	--	2 <sup>4</sup>	18	--	--	--	--
Singapore	1 <sup>4</sup>	10	--	--	1	9	--	--	--	--
Slovakia	5	119	--	--	--	--	--	--	--	--
South Africa	206 <sup>4</sup>	3,610	--	--	--	--	--	--	--	--
Spain	1 <sup>4</sup>	12	--	--	79 <sup>4</sup>	473	--	--	--	--
Suriname	2 <sup>4</sup>	21	--	--	--	--	--	--	--	--
Sweden	5 <sup>4</sup>	81	--	--	4 <sup>4</sup>	42	--	--	--	--
Switzerland	4 <sup>4</sup>	68	--	--	80	583	--	--	(5) <sup>4</sup>	8
Taiwan	38 <sup>4</sup>	964	--	--	265 <sup>4</sup>	823	--	--	--	--
Thailand	5 <sup>4</sup>	80	--	--	8	60	--	--	(5) <sup>4</sup>	12
United Arab Emirates	1 <sup>4</sup>	23	--	--	--	--	--	--	--	--
United Kingdom	316 <sup>4</sup>	5,760	1,750	36,700	768 <sup>4</sup>	2,660	4 <sup>4</sup>	12	--	--
Other	1 <sup>4</sup>	10	--	--	3 <sup>4</sup>	34	--	--	--	--
Total	1,790	36,400	2,400	44,600	2,520	11,000	40	303	33	1,830
Year to date	10,700	209,000	12,600	229,000	12,600	60,100	348	2,470	162	9,890

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Unwrought and other forms.

<sup>3</sup>Gross weight.

<sup>4</sup>All or part of these data have been referred to the U.S. Census Bureau for verification.

<sup>5</sup>Less than 1/2 unit.

Source: U.S. Census Bureau.